

US CLAIMS

1. A method of removing soil from a surface, the method comprising the steps, in sequence, of:

- (a) treating the surface with an antioxidant;
- (b) allowing the soil to deposit; and
- (c) cleaning the surface to remove the soil.

2. A method according to claim 1 wherein the soil is a fatty soil.

3. A method according to claims 1 wherein the antioxidant is applied to the surface neat.

4. A method according to claims 1 wherein the antioxidant is applied to the surface in liquid diluted form.

5. A method according to claim 1 wherein the antioxidant is a natural antioxidant.

6. A method according to claims 1 wherein the antioxidant contains one of the following substructures:



or a derivative thereof in which one or both OH (preferably only one) the H has been replaced by an organic group.

7. A method according to claim 6 wherein the antioxidant comprises ascorbic acid and salts thereof and ascorbyl esters.

8. A method according to claim 6 wherein the substructure is a 1,2- or 1,4 dihydroxybenzene unit or derivative thereof.

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9. A method according to claim 8 wherein the antioxidant is chosen from caffeic, ferulic rosmarinic and vanillic acid and their amides and esters and salts, sesamol and its derivatives, tocopherols and tocotrienols.

10. A method according to claim 8 wherein the substructure is a 3,4,5-trihydroxybenzoyl unit or substituted derivatives thereof.

11. A method according to claim 10 wherein the antioxidant is chosen from gallic acid and its amides and esters and salts, tannic acid and its esters and salts, tannin, epigallocatechin gallate and theaflavin digallate.

12. A method according to claim 4 wherein the antioxidant is part of a cleaning composition also comprising a detergent surfactant.

13. A method according to claim 3 wherein the antioxidant is applied with a wipe impregnated with the antioxidant or the composition comprising the antioxidant.

14. Use of an antioxidant for facilitating removal of soil from a surface to which the antioxidant has been applied.

15. Use according to claim 14 wherein the soil is a fatty soil.

16. Use according to claim 14 wherein the antioxidant is applied to the surface neat.

17. Use according to claim 14 wherein the antioxidant is applied to the surface in liquid diluted form.

18. Use according to claim 14 wherein the antioxidant is a natural antioxidant.

19. Use according to claim 14 wherein the antioxidant contains one of the following substructures:



or a derivative thereof in which of one or both OH (preferably only one) the H has been replaced by an organic group.

20. Use according to claim 19 wherein the antioxidant comprises ascorbic acid and salts thereof and ascorbyl esters.

21. Use according to claim 19 wherein the substructure is a 1,2- or 1,4 dihydroxybenzene unit or derivative thereof.

22. Use according to claim 21 wherein the antioxidant is chosen from caffeic, ferulic rosmarinic and vanillic acid and their amides and esters and salts, sesamol and its derivatives, tocopherols and tocotrienols.

23. Use according to claim 21 wherein the substructure is a 3,4,5-trihydroxybenzoyl unit or substituted derivatives thereof.

24. Use according to claim 23 wherein the antioxidant is chosen from gallic acid and its amides and esters and salts, tannic acid and its esters and salts, tannin, epigallocatechin gallate and theaflavin digallate.

25. Use according to claim 17 wherein the antioxidant is part of a hard surface cleaning composition also comprising a detergent surfactant.

26. Use according to claim 16 wherein the antioxidant is applied with a wipe impregnated with the antioxidant or the composition comprising the antioxidant.

27. Use of an antioxidant in the manufacture of a product containing that antioxidant, the product being for treatment of a surface to be subsequently cleaned to enable easier removal of soil from the hard surface during said subsequent cleaning.

28. Use of an antioxidant according to claim 27 wherein the product is a liquid.

29. Use of an antioxidant according to claim 27 wherein the product is a wipe.

30. Use of an antioxidant according to claim 27 wherein the antioxidant is a natural antioxidant.

31. Use of an antioxidant according to claim 27 wherein the antioxidant contains one of the following substructures:



or a derivative thereof in which of one or both OH (preferably only one) the H has been replaced by an organic group.

32. Use of an antioxidant according to claim 31 wherein the antioxidant is chosen from: ascorbic acid and salts thereof and ascorbyl derivatives, caffeic, ferulic rosmarinic and vanillic acid and their amides and esters and salts, sesamol and its derivatives, tocopherols and tocotrienols, gallic acid and its amides and esters and salts, tannic acid and its esters and salts, tannin, epigallocatechin gallate and theaflavin digallate.

33. A liquid composition having a pH less than 12 and comprising a detergent surfactant in an amount of 0.05-45% by weight and an antioxidant in an amount of 0.01-10% by weight and having a viscosity of at least 100 mPaS at a shear rate of 21s^{-1} .

34. A composition according to claim 33, comprising a thickener.

35. A composition according to claim 34 wherein the thickener is xanthan gum.

36. A composition according to claim 33, wherein the viscosity is at least partly due to one or more surfactants and optionally, electrolyte, in said composition.

37. A composition according to any of claim 33 wherein the antioxidant is a natural antioxidant.

38. A composition according to claim 33 wherein the antioxidant is as defined in any of claims 6-11.

39. A composition according to claim 38 wherein the antioxidant is chosen from ascorbic acid and a salt thereof and ascorbyl esters, caffeic, ferulic rosmarinic, and vanillic acid and their amides and esters and salts, sesamol and its derivatives, tocopherols and tocotrienols, gallic acid and its amides and esters and salts, tannic acid and its esters and salts, tannin, epigallocatechin gallate and theaflavin digallate.

40. A composition according to claim 33 which comprises at least two antioxidants.

41. A composition according to claim 33 which additionally comprises 0.05-5% of a metal ion sequestrant.

42. A composition according to claim 41 wherein the sequestrant is citric acid or phosphate.

43. A wipe comprising an antioxidant or a composition comprising an antioxidant.

44. ~~A wipe according to claim 43 wherein the composition is as defined in any of claims 33-42.~~

45. A dispenser for a liquid, the dispenser comprising a reservoir containing a liquid composition comprising an antioxidant in an organic or aqueous solvent and having a pH below 12, and spray means for dispensing said liquid in the form of a spray.

46. A dispenser according to claim 45, wherein the spray means is a trigger spray.

47. A dispenser according to claim 45 wherein the liquid contains a metal ion sequestrant.

48. A dispenser according to claim 45 wherein the composition comprises less than 0.1% by weight of detergent surfactant.

49. A composition for use in machine dish wash operations comprising an antioxidant.

50. A composition according to claim 49 which is a rinse aid.

51. A rinse aid according to claim 50 which comprises citric acid and/or a wetting surfactant and at least 0.05% of antioxidant.